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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/766,629	01/27/2004	Glenn Joseph Leedy	ELM-1CONT.15	3771
1473	7590	04/27/2006	EXAMINER	
FISH & NEAVE IP GROUP ROPES & GRAY LLP 1251 AVENUE OF THE AMERICAS FL C3 NEW YORK, NY 10020-1105			HO, TU TU V	
			ART UNIT	PAPER NUMBER
			2818	

DATE MAILED: 04/27/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/766,629

Applicant(s)

LEEDY, GLENN JOSEPH

Examiner

Tu-Tu Ho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 February 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 102-108, 117-120, 138-147, 183-193 and 216-226 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 117, 118, 120, 138-147, 184-193 and 216-226 is/are allowed.
- 6) ☒ Claim(s) 102-108, 119 and 183 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 August 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's Amendment filed 02/14/2006 has been reviewed and placed of record in the file.

Terminal Disclaimer

2. The terminal disclaimer filed on 02/14/2006 disclaiming the terminal portion of any patent granted on this application which would extend beyond the expiration date of Application No. 10/385,386 is in the process of being reviewed.

Claim Rejections - 35 USC § 102

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

3. **Claims 102-107 and 119** are rejected under 35 U.S.C. 102(e) as being anticipated by Fueki et al. U.S. Patent 5,144,142 (the '142 reference, cited by Applicant, and cited in a previous office action).

The '142 reference discloses the figures, particularly in Figures 2, 3-4, 7, and 17, and respective portions of the specification an apparatus for forming a patterned layer during manufacture of an integrated circuit as claimed. In particular, the '142 reference discloses a blanking aperture array for use in a charged particle beam exposure apparatus for forming a patterned layer during manufacture of an integrated circuit, wherein the aperture array is formed

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in a substrate, each of the aperture of the array of the apertures comprises a pair of electrodes and associated control shift registers (Abstract).

Referring to **claim 102**, the reference discloses an apparatus for forming a patterned layer during manufacture of an integrated circuit, comprising:

an elastic integrated circuit (generally indicated at 19A, Figs. 4, where “elastic” is interpreted broadly to be an inherent characteristic of dielectric parts of the integrated circuit, dielectric parts such as 98, 103, (Figs. 4B, 4C, column 10, lines 5-15), SiO₂ layer or the like (not shown, Figs. 17’s, column 17, lines 15-20)) having at least one dielectric layer (dielectric parts such as 98, 103, (Figs. 4B, 4C, column 10, lines 5-15), SiO₂ layer or the like (not shown, Figs. 17’s, column 17, lines 15-20) with (an inherent) tensile stress (see definition below or next page);

a plurality of exposure elements (generally indicated at, for example, the elements 92/97/98/94 (electrodes and dielectric layers that define exposure aperture element 19c, Figs. 4A and 4B; or the elements 102/103/99/104, Fig. 4C); and

means for selectively irradiating with at least one type of radiant energy (electron beam EG, Fig. 2, column 3, lines 30-40) portions of a surface of a layer (generally indicated at wafer WF, Fig. 2) by electronically controlling individually each of the exposure elements (Figs. 2, 3-4, 7, and 17, column 8, lines 12+).

ten•sile




1. Of or relating to tension.
2. Capable of being stretched or extended; ductile.

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[New Latin *tēnsilis*, from Latin *tēnsus*, stretched out. See *tense*.¹]

- *ten·sili·ty*, *n.*.

[Note about stress marks: ˈ(primary); ˌ(secondary), as in pronunciation (pronunˈciaˈtion)]

The American Heritage Dictionary of the English Language, © Houghton Mifflin Company 2003 

Referring to **claim 103**, the reference further discloses that the radiant energy is electron beam, as noted above.

Referring to **claim 104**, the reference further discloses that the exposure elements are miniature sources of electron beam (electron beam EB, Fig. 4B).

Referring to **claim 105**, the reference further discloses that the exposure elements control passage of radiant energy (EB) from an external source (generally indicated at EG, Fig. 2).

Referring to **claim 106**, the reference further discloses that the exposure elements control passage of radiant energy from an external source using electromagnetic deflection (produced by electrodes 91, 92, 94 or 99, 104, Figs. 4)

Referring to **claim 107**, the reference further discloses means (such as 19A, Figs. 4) for separately focusing radiant energy emitted from the plurality of exposure elements.

Referring to **claim 119**, the reference further discloses an elastic dielectric layer (Figs. 17, where a plurality of un-depicted SiO₂ layer or the like (Figs. 17's, column 17, lines 15-20) are used to insulate electrically conductive electrodes 3's) with "elastic" being interpreted broadly as noted above.

Claim Rejections § 102 & § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

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4. **Claim 108** is rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Fueki et al. U.S. Patent 5,144,142 (the '142 reference).

The reference discloses an apparatus for forming a patterned layer during manufacture of an integrated circuit as detailed above for claim 102 and further discloses shifting the plurality of exposure elements with respect to the surface (through means ST, Fig. 2). And although the reference does not explicitly disclose ceasing irradiating the surface and resuming irradiating the surface between a shifting the plurality of exposure elements with respect to the surface as claimed, it appears that ceasing irradiating the surface and resuming irradiating the surface between a shifting the plurality of exposure elements with respect to the surface are required or necessary operations.

Claim Rejections - 35 USC § 103

5. **Claim 183** is rejected under 35 U.S.C. §103(a) as being unpatentable over Fueki et al. U.S. Patent 5,144,142 (the '142 reference).

The reference discloses an apparatus for forming a patterned layer during manufacture of an integrated circuit as detailed above for claim 102 and further discloses that the plurality of exposure elements includes about 100,000 elements (100 X 1000 aperture elements, column 14, lines 12-20). Although the reference does not disclose at least one million elements as claimed, the reference does not disclose that at least one million elements is not attainable, therefor changing from 100,000 to at least one million would have been obvious to one of ordinary skill in the art at the time the invention was made.

Response to Arguments

6. Applicant's arguments with respect to claims 102-108, 119, and 183, filed 02/14/2006, have been fully considered but they are not persuasive.

With respect to Applicant's arguments on page 11 of the Remarks that Fueki does not disclose an elastic integrated circuit having at least one dielectric layer with a tensile stress, it is respectfully pointed out that, as detailed above, Fueki's integrated circuit including at least a dielectric layer and/or a silicon dioxide layer, as detailed above, inherently possesses some degree of elasticity and Fueki's integrated circuit's dielectric layer and/or a silicon dioxide layer inherently possesses some degree of tensile stress.

Allowable Subject Matter

7. Claims 117-118, 184, 186-193, 120, 185, 138-145, 217, 146-147, 218, 216, and 219-226 are allowable over the prior art of record.

The allowable subject matter was indicated in the Office Action mailed 11/14/2005.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37

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CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tu-Tu Ho whose telephone number is (571) 272-1778. The examiner can normally be reached on 7:30 am - 6:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, DAVID NELMS can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Tu-Tu Ho
April 18, 2006